

Remarks

Reconsideration of the above referenced application in view of the enclosed amendment and remarks is requested. Claims 1, 2, 5, 7, 11-21, and 25 have been amended. Existing claims 1-27 remain in the application.

ARGUMENT

§101 Rejections:

Claims 11-20 are rejected under 35 U.S.C. § 101 as not being directed to statutory subject matter. This rejection is respectfully traversed and Claims 11-20 are believed allowable based on the above amendments and foregoing and following discussion.

Claims 11-20 have been amended to recite a *machine accessible storage medium having instructions stored thereon*. As is well understood, the inventor is entitled to describe supporting information sufficient to enable the invention. The description of machine accessible medium in the specification is merely an example of possible media in existence. However, it is the claims that define the metes and bounds of the invention. It will be clear to one of ordinary skill in the art that a machine accessible storage medium having instruction stored thereon limits the medium to tangible *storage* media, as permitted by law. *In re Beauregard* (citations omitted) clearly holds that computer readable (e.g., machine accessible) storage media are articles of manufacture and therefore statutory. Thus, this rejection should be withdrawn.

Claim Objections:

Claims 1-19 and 25 are objected to because of informalities. The Examiner asserts that Claims 1, 2, 4, 5, 11, 12, 14, 15 and 25 have elements that lack antecedent basis. Applicants respectfully disagree. One of ordinary skill in the art will understand, for instance, that “receiving a service request” results in a “received service request.” One of skill in the art will understand that the “received service request” is the same service request as the service request received during the receiving element. However, in order to expedite the issuance of the recited claims, Applicants amend Claims 1, 2, 4, 5, 11, 12, 14, 15 and 25 to accommodate the Examiner’s request.

The typographical error in Claim 11 is corrected herein.

§112 Rejections:

Claims 11-20 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which is regarded as the invention. This rejection is moot based on the above amendments.

Claim 11 is amended to recite “*A machine accessible storage medium having instructions stored thereon for servicing out-of-band service requests in a computing device, the instructions when executed on a machine cause the machine to.*” Thus, “the computing device” has antecedent basis.

Any ambiguity in Claim 24 is moot based on the amendment to Claim 21. Claim 21 is amended to recite that the multiplexing agent polls the selected storage location for “newly received service requests,” and to recite that the multiplexing agent is invoked “in response to receiving a service request.” Thus, in Claim 24, “the service request” has antecedent basis in “a service request” in Claim 21.

§103 Rejections:

Claims 1, 3-5, 9, 11, 13-15, 19, 21 and 23-25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *IPMI, Intelligent Platform Management Interface Specification v1.5*, February 20, 2002 (hereinafter, “IPMI SPEC”) in view of U.S. Pub. No. 2004/0158625 to Neale (hereinafter, “Neale”). This rejection is respectfully traversed and Claims 1, 3-5, 9, 11, 13-15, 19, 21 and 23-25 are believed allowable based on the foregoing and following discussion.

The Examiner asserts that combining the teachings of Neale with the IPMI SPEC will result in Applicants’ invention. However, the IPMI SPEC merely describes the details of out-of-band communication according to the IPMI protocols. Systems existing at the time of filing were limited to a small subset of commands available for controlling the server. For instance, as described in the Specification, IPMI communication was useful for retrieving sensor information from the server, and for initiating three commands to an operating system resident agent: “OS resident agents, as used in state of the art systems, only understand three commands: (i) turn off; (ii) restart, and (iii) request OS version.” (See Para [0015].) Applicants’ Claims require use of a

multiplexing agent to select an appropriate subagent (including the SMBIOS agent, as recited in Claim 2).

The Examiner asserts that Neale teach the multiplexing agent and subagents. However, Neale does not teach an agent as described in the Specification, and recited in the Claims. Neale teach that a master agent is communicatively coupled to one or more subagents which may be implemented on the same hardware platform or another hardware platform (Para 22). Each subagent is responsible for managing a management information base (MIB), and allows the master agent to access the MIB of the subagent when SNMP messages are received. Neale also require that that the communication channels are capable of transmitting AgentX protocol and that the communication channels are either IP networks, remote procedure calls, inter-process communication such as message passing. Thus, it would seem that Neale is teaching subagents that are to manage nodes/devices on a network, and not a single server.

AgentX protocol is described in "RFC 2741 - Agent Extensibility (AgentX) Protocol Version 1" available on the Internet at [www*faqs*org/rfcs/rfc2741.html](http://www.faqs.org/rfcs/rfc2741.html) (where periods are replaced with asterisks to avoid inadvertent hyperlinks). AgentX communication protocol is strictly used to manage objects within a node, on a network, using a management information base (MIB):

"New MIB modules that extend the Internet-standard MIB are continuously being defined by various IETF working groups. It is also common for enterprises or individuals to create or extend enterprise-specific or experimental MIBs. As a result, managed devices are frequently complex collections of manageable components that have been independently installed on a managed node. Each component provides instrumentation for the managed objects defined in the MIB module(s) it implements." (RFC 2741, § 3.)

The motivation to use AgentX protocol is described as a

"very real need to dynamically extend the management objects within a node has given rise to a variety of "extensible agents", which typically comprise - a "master" agent that is available on the standard transport address and that accepts SNMP protocol messages - a set of "subagents" that each contain management instrumentation

- a protocol that operates between the master agent and subagents, permitting subagents to "connect" to the master agent, and the master agent to multiplex received SNMP protocol messages amongst the subagents.
- a set of tools to aid subagent development, and a runtime (API) environment that hides much of the protocol operation between a subagent and the master agent."

(RFC 2741 § 3.1)

Neale does not teach or suggest is that service requests may be sent to a server via out-of-band (OOB) communication and be handled by an operating system resident multiplexing agent which then invokes the appropriate subagent to handle the request. In fact, most of the AgentX commands seem to be related to PDUs (protocol data units) and used in network communication. The protocol requirements of system described by Neale seem to teach away from OOB communication, as well as an operating system resident multiplexing agent. The master agent, as described by Neale does not perform the same kind of requests or operate to manage a single server by a remote client.

Combining AgentX protocol of Neale, for managing objects in nodes on a network, with the IPMI SPEC cannot result in Applicants' claimed invention. The AgentX protocol, and its defined uses, seems to be counter to IPMI protocol for message passing via a BMC. Claim 1, for instance, requires receiving the service request via an OOB connection, and polling the incoming requests by an operating system resident multiplexing agent. Neale teaches away from this type of agent in describing that the subagents may be on a different hardware platform. It is inherent in the Claims, and shown in the Specification and Figures, that the subagents are invoked by the operating system resident multiplexing agent on the same platform. This is made explicit in the amendments requiring *invoking the subagent on the computing device determined to correspond to the service request, wherein the subagent corresponding to the service request services the service request*. Neale does not teach that the subagent is on the computing device and services the service request. Neale teaches away from this use case, as discussed above. Further, Claim 21, as originally filed, requires "*at least one subagent running on the processor*."

It will be apparent to one of skill in the art that the IPMI specification does not teach or suggest the multiplexing of requests, and that Neale does not teach an operating system resident multiplexing agent with subagents for servicing service requests received via an OOB connection. Thus, the cited references, either alone or in combination, do not teach the required elements of the Claims.

Claims 2, 12 and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over IPMI SPEC and Neale in view of U.S. Pub. No. 2001/0014907 to Brebner (hereinafter,

“Brebner”). This rejection is respectfully traversed and Claims 2, 12 and 22 are believed allowable based on the foregoing and following discussion.

First, Applicants assert, as described above, that neither IPMI SPEC nor Neale alone or in combination show the limitations of the base Claims. Further, the Examiner asserts that Brebner teach a system of accessing resources on a network wherein a SMBIOS agent accesses SMBIOS tables to fulfill a service request. However, Brebner do not teach an agent that will operate with the other required elements of Applicants’ claims.

Brebner teach using a DMI or WMI interface to directly access the SMBIOS level based on a user’s natural language request. The system taught by Brebner is for a novice user who wishes to upgrade a computer, or purchase additional accessories for the computer. Brebner teach that the novice user operates an easy to use natural language interface, typically while connected to the Internet via a browser. Since the novice user often does not know the computer specifications, the “agent” accesses the SMBIOS tables to retrieve information required to make the correct purchase. This usage teaches away from controlling the computer via an out-of-band connection. Further, access to the SMBIOS tables retrieves information only to report the comprehensive information needed to upgrade the system. The SMBIOS information is extracted using DMI or WMI and does not teach or suggest that an operating system resident multiplexing agent may invoke an SMBIOS subagent after determining that the service request requires this particular agent.

IPMI SPEC does not teach or suggest the operation of a multiplexing agent that invokes a SMBIOS subagent upon receipt of an OOB service request. Neale teach away from this type of agent and subagent operation, and Brebner does not teach or suggest receiving OOB service requests, a multiplexing agent or that the SMBIOS subagent is invoked by the multiplexing agent. Combining these references is not only counterintuitive because they solve different problems, but the combination of references will not result in Applicants’ claimed invention. As discussed in the Specification, as originally filed, IPMI does not provide interfaces to access the SMBIOS table directly. Thus, agents running on the host processor, rather than the BMC are required to access this information. None of the references either alone or in combination teach this operation.

Claims 6-7, 16-17, and 26-27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over IPMI SPEC and Neale in view of USPN 6,067,559 to Allard et al. (hereinafter, "Allard"). This rejection is respectfully traversed and Claims 6-7, 16-17 and 26-27 are believed allowable based on the foregoing and following discussion.

Claims 6-7, 16-17 and 26-27 are believed allowable, at least by being dependent on an allowable base claim.

Claims 8 and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over IPMI SPEC and Neale in view of U.S. Pub. No. 2002/0107905 to Roe et al. (hereinafter, "Roe"). This rejection is respectfully traversed and Claims 8 and 18 are believed allowable based on the foregoing and following discussion.

Claims 8 and 18 are believed allowable, at least by being dependent on an allowable base claim. Further, at the cited reference (Para 39 and 75) Roe does not seem to show a multiplexing agent continuing to poll the selected storage location simultaneously with the servicing of a service request by the subagent. Roe seems to teach a plurality of agents 102 within an adaptive engine 302, using AI techniques to determine what operation to perform on behalf of a plurality of users by a single service fulfillment engine 304. The adaptive engine seems to operate simultaneously with the service fulfillment engine. However, the adaptive engine is not a single multiplexing agent, but a plurality of agents. Also, Roe does not teach or suggest a single multiplexing agent polling for service requests and determining which subagent to launch. Moreover, Roe does not teach or suggest that service requests are received by an out-of-band connection, or that the multiplexing agent is operating system resident. Therefore, combining Roe with the other cited references will not result in the recited invention in Claims 8 and 18.

Claims 10 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over IPMI SPEC and Neale in view of USPN 5,802,368 to Grigsby et al. (hereinafter, "Grigsby"). This rejection is respectfully traversed and Claims 10 and 20 are believed allowable based on the foregoing and following discussion.

Claims 10 and 20 are believed allowable, at least by being dependent on an allowable base claim. Further, Claims 10 and 20 recite *registering at least one callback function corresponding to the added dynamic link library with the multiplexing agent, wherein the identifying and registering are performed during runtime.* [emphasis added] The Examiner seems to assert that Grigsby teaches this limitation. However, the Examiner is silent as to the requirement that the callback function be registered with the multiplexing agent. Grigsby teach that the callback functions are registered with the TSE (task switch enhancer), but the TSE is not the same as a multiplexing agent, as described and claimed by Applicants. Grigsby teach that the TSE is an “external service” (Col. 2, lines 34-35). However, the TSE is not the same as an operating system resident multiplexing agent that polls for new requests. Thus, the Examiner has failed to set forth a *prima facie* case of obviousness.

All claims remaining in the application are now allowable.

CONCLUSION

In view of the foregoing, Claims 1 to 27 are all in condition for allowance. If the Examiner has any questions, the Examiner is invited to contact the undersigned at (703) 633-6845. Early issuance of Notice of Allowance is respectfully requested. Please charge any shortage of fees in connection with the filing of this paper, including extension of time fees, to Deposit Account 50-0221 and please credit any excess fees to such account.

Respectfully submitted,

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